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Palæontographica. Beiträge zur Naturgeschichte der Vorzeit. Sechsundzwanzigster Band oder dritte Folge. Zweiter Band. Erste und zweite Lieferung. Edited by Wilh. Dunker and Karl A. Zittel, assisted by Benecke, Beyrich and others. 4to, pp. 50, pls. XIII. Theodor Fischer, Cassel, (June), 1879. From the publisher.

The Peduncular Tracts of the Anthropoid Apes. By Edward C. Spitzka, M.D. (Ext. from the Journ. of Nervous and Mental Disease, July, 1879.) 8vo, pp. 27. New York. From the author.

The Outer ear of Blarina brevicauda. By Dr. Elliott Coues, U.S.A. (Ext. from American Journal of Otology, Vol. I, July 18, 1879.) 8vo, pp. 2. New York, Wm. Wood & Co. From the author.

Catalogue of Scientific Serials in the Library of Harvard University. Samuel H. Scudder, Cambridge, 1879. 8vo, pp. 358.

Resources and Attractions of Utah. Prepared by the Utah Board of Trade. Omaha Republican Publishing House, 1879. 8vo, pp. 74.

Writings of Samuel Hubbard Scudder. Published by the editor, George Dimmock. Cambridge, August, 1879. 8vo, pp. 28.

Note sur le Breyeria Borinensis. Par A. Proudhomme de Borre. (Extrait des Comptes-rendus de la Société Entomologique de Belgique. Séance du 7 Juin, 1879, Bruxelles.) 8vo, pp. 6.

Principal J. W. Dawson's Criticism of my Memoir on the Structure of Eozoön Canadense compared with that of Foraminifera. (From the American Journal of Science and Arts, Vol. XVIII, September, 1879.) By K. Möbius. 8vo, pp. 10.

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GENERAL NOTES.

BOTANY.

Sir John Lubbock on Seeds.—At the last meeting of the British Association Sir John Lubbock read an interesting paper on seeds. He commenced by calling attention to the difference presented by seeds, some being large, some small, some covered with hooks, some provided with hairs, some smooth, some sticky, &c. He gave the reasons of these peculiarities, and then spoke of the modes of dispersion, by means of which seeds secured a sort of natural rotation of crops, and in other cases were enabled to rectify their frontiers. Some plants actually threw their seeds, some were transported by the wind, and many were provided with a wing which caught the wind. Dispersion was also effected by the agency of animals. This means was divided into two classes, where seeds adhered to animals by hooks, and where the same purpose was effected by sticky glands. The next point touched upon was, that seeds found themselves in spots suitable for growth. Most seeds germinated on the ground, but there were instances, as the mistletoe, where they were parasitic on trees. Such seeds were imbedded in a viscid substance, so that if dropped by a bird on a bough they adhered to it. In some cases plants buried their own seeds, and in other instances the seeds buried themselves, the means by which these processes were effected being fully explained by Sir John, who, in conclusion, called attention to mimicking seeds, such as the Scorpiurus, the pods of which did not open, but looked so exactly like worms that birds were induced to peck at them and thus free the seeds. That this was the purpose of the resemblance he would not assert, but he threw it out as a matter for consideration.

THE FRUIT OF SHEPHERDIA CANADENSIS.—In the same locality as *Prunus pumila* (p. 649) is found *Shepherdia Canadensis* Nutt., whose fruit differs from the description commonly given. Gray's Manual states that it is "yellowish-red, insipid;" Wood's Class Book, "Berries oval, scaly, sweetish to the taste;" Nuttall, who originally described it, "Berries squamose, sweetish but scarcely edible." The berries are pleasantly acid, followed, however, by a slightly bitter taste if the skin be retained in the mouth. The color is scarlet, in this respect, as well as in the globular form and the size, closely resembling the common red currant. A dish of them would at first sight be taken for currants by almost any one. The bushes bore abundance of fruit this year, which is rather uncommon, and except in leaves, strikingly simulated well-loaded currant bushes. Bringing some home in fruit, and showing them to some children before allowing them to be tasted, they were at once said to be currants, and were eaten with a relish, showing that the children do not agree with the botanists, if these are typical berries. They are sparsely covered with scales in the form of the brown radiating hairs so abundant on the under side of the leaf, that form such pretty objects under the microscope. The description of the fruit of the buffalo berry of Upper Missouri (*S. argentea* Nutt), "edible, acid, scarlet," really answers more correctly for this. The plant does not seem to vary otherwise from the ordinary description.—*E. J. Hill.*

POTAMOGETON NIAGARENSIS TUCKERMAN.—The only locality for this plant given in Gray's Manual is "Rapids above Niagara Falls," I do not find it mentioned in other books. It occurs abundantly at South Chicago in the Calumet river, and in the pools and ditches that drain into it from Englewood eastward. It is usually in rather shallow water, often forming dense masses filling the water to the depth of several inches, and fruiting freely. In a note from Dr. Gray it is said to occur in other parts of Illinois. The plant seems a little more slender than that described in the Manual, with narrow leaves. But the "short, club-shaped, compressed peduncles," the "capitate 8–12 flowered spikes," though hardly "*few*," and the "roundish, compressed fruit, with a winged and toothed keel and angled face," and the "convolute, uncinate seed," define it clearly. It comes into fruit by the middle of June and continues throughout the summer.—*E. J. Hill.*

THE HOUSTONIA ROTUNDIFOLIA PRODUCING DOUBLE FLOWERS.—Though Chapman limits the *Houstonia rotundifolia* Michx., to "sandy soil near the coast," I found it quite common in the central or lake region of Florida. At Santa Fe lake, Fla., on January 14, 1878, I met an instance of this plant producing double flowers. Each beautiful little snow-white blossom was so crowded with petals as to form a perfect tiny rosette; the other parts varied in there being three pistils having exserted styles, while there were five included stamens. Several of the inner petals also were tipped with anthers, resembling the same feature in the water-lily. The plant grew under an old fence, the rails of which were partially decayed; but there were otherwise no artificial surroundings to which the peculiarity might be ascribed. The dimorphous character of the flowers in the genus Houstonia is worth recalling in this connection, and it is further noteworthy that the species under consideration bears apetalous fruiting flowers throughout the year.—*Henry Gillman, Detroit, Michigan.*

A SUGGESTION.—To mark the relative frequency of species in a local flora the botanists always use the terms, common, abundant, frequent, scarce, rare, very rare, etc. This is not sufficient when we intend to give a characteristic view of the vegetation of a certain district. As it is impossible to count the single individuals of each species, we should try to find out approximate proportions of the species to the whole mass of vegetation after the method which was first (in 1848) proposed by Prof. Schnitzlein in his valuable book on the vegetation of the Jura and Keuper formation. Suppose a distance of one hundred square miles divided into ten equal parts of ten square miles each. We would mark a species which occurs in each of those parts with the Roman figure x, when only in five with v, when only in one with I, etc. This would show the distribution of a plant over the whole area in question. Of course when a plant grows only in swamps, or on prairies, or in woods, these figures would indicate only the occurrence in so many parts of swamp land, prairie land, or wood land, and it would be necessary that the flora be accompanied by an accurate topographical map on which were marked the limits of wood land, swamp land, prairie land, cultivated land, etc., or else the proportion of these different soils to the whole area should be indicated. The relative number of each species in each locality could be marked by an Arabic figure from 1 to 10. So I. 1 would mean only a single specimen found on a single locality, I. 2 a few specimens, I. 3 a limited number, and so on to 10, which would mean an immense number.

A plant marked I. 1, especially when inconspicuous, would be no indication of the character of the landscape and another marked II. 2 neither, when those marked with X. 10, X. 9, IX. 10, IX. 9, etc., would be of a decided influence, giving the view a prominent stamp. Small inconspicuous plants, for instance, *Eleocharis avicularis*, act upon the sight only in large masses (be it by millions), when a much smaller number (thousands) of woody species, for instance *Quercus alba* or *Corylus americana*, may have the same effect. Both the former and the latter we would mark by 10, as we do not count the exact number of individuals but the manner in which they strike the sight. For the intention of this method is not only to give the relative frequency of each species, but at the same time to show what part the species does play in the whole vegetation of a certain district as presenting itself to our view.

Besides these designations the geological character of a locality could be marked by the letters A, B, C, etc.

This simple method, which requires not much space in a book, would be a valuable improvement in our floral catalogues.—*Fred. Brendel.*

BOTANICAL NOTES.—There has lately been on exhibition in the window of the office of the *Providence Journal*, a magnificent fasciated specimen of the golden-banded lily of cultivation, bearing one hundred and thirty-seven blossoms. The stem is flattened in the usual way when this teratological phenomenon is seen.——The attention of botanists is called to an important contribution to American botany by Mr. Sereno Watson. It is published by the American Academy of Arts and Sciences, and is entitled a Revision of the North American Liliaceæ. It evinces the usual painstaking care and discrimination of its author, and will be welcome to the many students who have wandered through the chaos hitherto existing in this family. Many radical changes are made, but none, we believe, which will not be found for the better; certainly none for which good reasons could not be given. To instance two of these, the genus *Uvularia* retains the species *perfoliata* and *grandiflora*, while *sessilifolia* and *puberula* are brought under a genus *Oakesia*. The genus *Milla* mostly disappears in *Brodiæa*. A second portion of the same pamphlet describes a number of new species of various orders, the whole followed by a carefully prepared index.—*W. W. Bailey, Providence, R. I.*

THE SEA-WEEDS OF SALT LAKE.—The attention of the visitor to the shores of the Great Salt Lake, Utah, is sometimes attracted by the small masses of Algæ which are seen to be suspended in the brine, and to be cast ashore in little windrows on the sandy shores. Four years ago, while connected with Hayden's U. S. Geological Survey of the Territories, I made an investigation of the life of the Great Salt Lake, especially of *Artemia fertilis* and *Ephydra gracilis*, and took pains to collect in alcohol and also dry, specimens of these Algæ, as they had been unnoticed by botanists and collectors so far as I am aware. It is probable that these Algæ are almost the only source of food for the brine-shrimp, as they are diffused through the water in nearly equal abundance with the Crustaceans themselves, and in no case that I could see, grow attached to any objects in the lake or on the shore. The most common form is a rounded mass which lives suspended in the water.

Specimens of the Algæ collected were sent to Prof. W. G. Farlow, of Harvard University, from whom the following preliminary report has been received:

"The Algæ which you collected in Salt Lake are very interesting and, as far as I know, are the first which have ever been collected in that locality. Mr. Sereno Watson, the distinguished botanist of the King Survey, tells me that he examined a portion of Salt Lake for Algæ but without success, and thinks it probable that very few plants will be found in the lake. The specimens you sent comprise two small packages of dried material and a small bottle of alcoholic specimens. The alcoholic material is scarcely determinable, as the specific characters of Algæ, such as would be expected to occur in Salt Lake, are generally lost by immersion in alcohol. The dried material I have soaked out and examined.

"It consists largely of grains of sand and remains of small animals, mixed with which are three species of Algæ. The most abundant Alga is one which forms irregular gelatinous masses sometimes attaining a diameter of half an inch. The color, apparently much faded in drying, is brownish with a tinge of bluish-green.[1] It seems to me to be a species of *Polycystis*, and I am unable to refer it to any of the described species and have called it provisionally *Polycystis packardii.* Its distinguishing characters are the oblong shape of its cells, which are smaller than in any of the marine species of the genus which I have examined, and the firmness and lobulated form of the gelatinous substance in which they are imbedded. Besides the Polycystis is a species of Ulva, using the word in the extended sense adopted by Le Jolis, which is in fragments, so that one can form no very accurate idea of its habit. The microscopic characters, however, show that it is, with scarcely any doubt, *Ulva marginata* Ag., found on the coast of Europe. The specimens from Salt Lake agree very well with specimens from the French coast, which are considered by Le Jolis to be the species described by Agardh. The third Alga from Salt Lake is much less abundant than the others in the packages sent, and is also in poor condition for comparison with herbarium specimens. It is a species of Rhizoclonium, and it comes very near to *R. salinum* Ktz. (*R. riparium* Harv.), a common marine species of this country and also found in Europe near salt springs. The Salt Lake plant has smaller cells and approaches *R. kochianum*, a species also marine and found in saline regions.

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[1] The color in life is an olive green.—*A. S. P.*

"You will see then that two of the three species are recognizable as marine forms, while the third, in my opinion now, is at least not to be referred to a known marine form. As a rule, the Algæ found in saline regions belong to species found in brackish waters on the coast. One might expect to find a large variety of Ulveæ and Conferveæ in Salt Lake, and it would be of interest to see how closely these inland forms approximate to the littoral forms of the eastern and western coasts."—*A. S. Packard, Jr.*

BOTANICAL NEWS—The *Botanical Gazette* for September prints an article by Prof. J. T. Rothrock on the staining and double staining of vegetable tissue.——*Grevillea* for September contains an account, by W. L. Lindsay, of experiments on the colorific properties of lichens.——In Trimen's *Journal of Botany* for September, Mr. S. LeM. Moore discusses in an interesting way the mimicry of seeds and fruits, and the functions of seminal appendages, pointing out the resemblance of certain seeds to insects, spiders and shells. He concludes that "the insect-mimicing fruit or seed may escape from its seminivorous enemies by being passed over as an insect; moreover, insectivorous ones seizing it and finding out their mistake would be almost certain to fling it some distance away, by which means the species would stand a better chance of dispersion."

ZOÖLOGY.[1]

SUCCESSIVE APPEARANCE OF CHIROCEPHALUS AND STREPTOCEPHALUS IN THE SAME POND.—The pond at Woodbury, N. J., from which the types of a new species of the first-named genus were obtained, and which I called *C. holmanii*, has recently yielded specimens of a large species of Streptocephalus, which I have named *S. sealii*. Mr. W. P. Seal, who collected for me specimens of both species, tells me that Chirocephalus was very abundant, and Streptocephalus, though numerous, was not as plentiful. The consecutive appearance of these two species, the first in spring and the latter late in summer, in the same pond, seems to me worthy of record. The pond dries up during dry weather, and is not more than fifty feet in diameter. Mr. Seal, whose opinions I have learned to value very highly in reference to such matters, suggests that it is not improbable that wading and water birds carry the eggs of these branchipods and other water organisms, from place to place, in the mud or other material adhering to the feet and body.—*John A. Ryder.*

A THIRD LOCALITY FOR EURYPAUROPUS.—On the 20th of September last, I found specimens of the above-mentioned genus under sticks and leaves, in considerable abundance, at a place on the west side of the Schuylkill river, about a mile north of the

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[1] The departments of Ornithology and Mammalogy are conducted by Dr. ELLIOTT COUES, U. S. A.